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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,696	07/22/2003	Arno Sommer	02/045 SGL	7044
23416	7590	06/28/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			LOPEZ, CARLOS N	
			ART UNIT	PAPER NUMBER
			1731	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/624,696

Applicant(s)

SOMMER ET AL.

Examiner

Carlos Lopez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4 IDS's</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9, drawn to method of making a ceramic hollow body, classified in class 264, subclass 29.6.
- II. Claim 10-11, drawn to a hollow body, classified in class 428, subclass 66.2.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as using un-compressive cores.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Richard Beck on 6/21/06 a provisional election was made with traverse to prosecute the invention of group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "under the pressing conditions" lacks antecedent basis.

Regarding claim 5, the phrase "sandwich- like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by

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"sandwich-like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heine et al (US 6,030,913) in view of Krenkel et al (US 6,086,814). Heine discloses a method of making a composite C/C material for use as brake material (Col. 1, lines 51). The method as noted in example 1, provides a green body introducing fiber material (graphite fibers) impregnated with a binder into a mold, the filled mold is then pressed at a pressure of 10 to at most 30 bar (see Col. 5, line 60), curing the fiber containing composition as noted in example 1 at a temperature of 140°C and then carbonizing the green body in a non-oxidizing atmosphere comprised of nitrogen at a temperature of 900°C.

Heine is silent disclosing adding compressible cores to the pressing molding composition that is added to the mold.

However, Krenkel teaches that adding cores made of foamed polymer (See Col. 2, lines 55-60) are used to provide cavities and or recesses in certain internal or external

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areas for cooling or reinforcement purposes of the frictional elements, i.e brakes (See Abstract). As noted by Krenkel, the recess or cavities to be made on the resultant brake material are done by the addition of the core when the molding composition comprised of the claimed fiber and binder (and/or foreproduct as referred by Krenkel), can be shaped both mechanically and in a molding manner (See Col. 2, lines 39ff). Thus Krenkel clearly envisage the use of cores to produce recess or cavities on the greenbody prior or during when the molding composition can be mechanical shaped, hence when it is in the mold, as instantly claimed by applicant.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to have used the cores of Krenkel in molding the ceramic green body of Heine in order to provide cavities and or recesses in certain internal or external areas for cooling or reinforcement purposes of the frictional elements.

It is noted that the material forming the core is made of foamed polymer (See Krenkel Col. 2, line56) more specifically a styropor, a foamed polysterene, which is used by applicant in page 10 lines 15-24 of the instant filed specification as the material forming the core. Hence, it would have been obvious to a person of ordinary skill in the art to have expected the foamed polymer core of Krenkel to be compressed at least 5% and be able to be pyrolized and or reduction in volume during pyrolization during the carbonization step 5 in view that is made from the same material as claimed and that the pressure acted on by the mold of Heine is 30 bar, 30 times the atmospheric pressure, sufficient to compress the core at the very least 5%.

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As for claim 2 and 8, see Col. 6, lines 27ff noting impregnation and carbonization to form carbides.

As for claim 3, example 1 notes curing at 140°C.

As for claim 4, example 1 notes the third and fourth steps occurring at the same time.

As for claim 5, by definition styropor is foamed polymer in a sandwich like structure whose exterior layer is a hard polymer made of a styrene polymer having a melting temperature of 160°C which is above the curing temperature of 140°C.

As for claims 6-7, Col. 5, lines 5-10 discloses fiber length of 1mm having a weight % of 18 or above, meaning the mean fiber length, being 50% can be 1mm in length.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heine et al (US 6,030,913) in view of Krenkel et al (US 6,086,814) and in further view of Sangeeta et al (US 5,628,938). Heine and Krenkel are silent disclosing a using silicon alloy for infiltration. However, Sangeeta in Col. 11, lines 45ff teaches of using silicon alloys such as molybdenum-silicon alloy to infiltrate a C/C body to form silicon carbides. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use molybdenum-silicon alloy to infiltrate a C/C body as taught by Sangeeta with the combined teachings of Krenkel and Heine in order to provide an alternate source of silicon to form silicon carbide.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 10/741,374 ('374). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of '374 discloses the claimed first to fifth steps wherein the core is a compressible core that is compressed by at least 5% of its dimension in the pressing direction.

As for claim 2, claim 2 of '374 infiltrated the C/C body with a liquid metal.

As for claim 3, the claimed curing temperature is recited in claim 3 of '374.

As for claim 4, claim 4 of '374 that the third and fourth steps can be done simultaneously or partly overlapping in time.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references have been cited to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to be 'LZ' with a stylized flourish.

CL